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Subject: [PATCH v6 07/10] ipc: add new SEM\_SET command for sys\_semctl() call  
Posted by Stanislav Kinsbursky on Mon, 15 Oct 2012 16:00:12 GMT  
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New SEM\_SET command will be interpreted exactly as IPC\_SET, but also will update key, cuid and cgid values. IOW, it allows to change existent key value. The fact, that key is not used is checked before update. Otherwise -EEXIST is returned.

Signed-off-by: Stanislav Kinsbursky <skinsbursky@parallels.com>

---

```
include/uapi/linux/sem.h |  1 +
ipc/compat.c          |  1 +
ipc/sem.c             | 10 ++++++++
security/selinux/hooks.c |  1 +
security/smack/smack_lsm.c |  1 +
5 files changed, 12 insertions(+), 2 deletions(-)
```

```
diff --git a/include/uapi/linux/sem.h b/include/uapi/linux/sem.h
index 541fce0..b6ae374 100644
--- a/include/uapi/linux/sem.h
+++ b/include/uapi/linux/sem.h
@@ -18,6 +18,7 @@
 /* ipcs ctl cmds */
#define SEM_STAT 18
#define SEM_INFO 19
+#define SEM_SET 20

/* Obsolete, used only for backwards compatibility and libc5 compiles */
struct semid_ds {
```

  

```
diff --git a/ipc/compat.c b/ipc/compat.c
index 9c70f9a..84d8efd 100644
--- a/ipc/compat.c
+++ b/ipc/compat.c
@@ -290,6 +290,7 @@ static long do_compat_semctl(int first, int second, int third, u32 pad)
 break;

 case IPC_SET:
+ case SEM_SET:
 if (version == IPC_64) {
 err = get_compat_semid64_ds(&s64, compat_ptr(pad));
 } else {
```

  

```
diff --git a/ipc/sem.c b/ipc/sem.c
index 10e9085..3eac885 100644
--- a/ipc/sem.c
+++ b/ipc/sem.c
@@ -1085,12 +1085,13 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
 struct semid64_ds semid64;
```

```

struct kern_ipc_perm *ipcp;

- if(cmd == IPC_SET) {
+ if (cmd == IPC_SET || cmd == SEM_SET) {
    if (copy_semid_from_user(&semid64, arg.buf, version))
        return -EFAULT;
}

- ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid, cmd,
+ ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid,
+     (cmd != SEM_SET) ? cmd : IPC_SET,
     &semid64.sem_perm, 0);
if (IS_ERR(ipcp))
    return PTR_ERR(ipcp);
@@ @ -1105,6 +1106,10 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
case IPC_RMID:
    freeary(ns, ipcp);
    goto out_up;
+ case SEM_SET:
+     err = ipc_update_key(&sem_ids(ns), &semid64.sem_perm, ipcp);
+     if (err)
+         break;
case IPC_SET:
    err = ipc_update_perm(&semid64.sem_perm, ipcp);
    if (err)
@@ @ -1152,6 +1157,7 @@ SYSCALL_DEFINE(semctl)(int semid, int semnum, int cmd, union
semun arg)
    return err;
case IPC_RMID:
case IPC_SET:
+ case SEM_SET:
    err = semctl_down(ns, semid, cmd, version, arg);
    return err;
default:
diff --git a/security/selinux/hooks.c b/security/selinux/hooks.c
index 78b77ac..02b037d 100644
--- a/security/selinux/hooks.c
+++ b/security/selinux/hooks.c
@@ @ -5133,6 +5133,7 @@ static int selinux_sem_semctl(struct sem_array *sma, int cmd)
    perms = SEM_DESTROY;
    break;
case IPC_SET:
+ case SEM_SET:
    perms = SEM_SETATTR;
    break;
case IPC_STAT:
diff --git a/security/smack/smack_lsm.c b/security/smack/smack_lsm.c
index d51a8da..b4135ed 100644

```

```
--- a/security/smack/smack_lsm.c
+++ b/security/smack/smack_lsm.c
@@ -2253,6 +2253,7 @@ static int smack_sem_semctl(struct sem_array *sma, int cmd)
case SETALL:
case IPC_RMID:
case IPC_SET:
+ case SEM_SET:
    may = MAY_READWRITE;
    break;
case IPC_INFO:
```

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Subject: Re: [PATCH v6 07/10] ipc: add new SEM\_SET command for sys\_semctl()  
call

Posted by [Serge E. Hallyn](#) on Tue, 23 Oct 2012 16:34:04 GMT

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Quoting Stanislav Kinsbursky (skinsbursky@parallels.com):

> New SEM\_SET command will be interpreted exactly as IPC\_SET, but also will  
> update key, cuid and cgid values. IOW, it allows to change existent key value.  
> The fact, that key is not used is checked before update. Otherwise -EEXIST is  
> returned.  
>  
> Signed-off-by: Stanislav Kinsbursky <skinsbursky@parallels.com>

Acked-by: Serge E. Hallyn <serge.hallyn@ubuntu.com>

(again, modulo requested /\* fallthrough \*/ comment )

```
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> include/uapi/linux/sem.h |  1 +
> ipc/compat.c           |  1 +
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> @@ -18,6 +18,7 @@
> /* ipcs ctl cmds */
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>     break;
>
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> + case SEM_SET:
>     if (version == IPC_64) {
>         err = get_compat_semid64_ds(&s64, compat_ptr(pad));
>     } else {
> diff --git a/ipc/sem.c b/ipc/sem.c
> index 10e9085..3eac885 100644
> --- a/ipc/sem.c
> +++ b/ipc/sem.c
> @@ -1085,12 +1085,13 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
>     struct semid64_ds semid64;
>     struct kern_ipc_perm *ipcp;
>
> - if(cmd == IPC_SET) {
> + if (cmd == IPC_SET || cmd == SEM_SET) {
>     if (copy_semid_from_user(&semid64, arg.buf, version))
>         return -EFAULT;
>     }
>
> - ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid, cmd,
> + ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid,
> +     (cmd != SEM_SET) ? cmd : IPC_SET,
>     &semid64.sem_perm, 0);
>     if (IS_ERR(ipcp))
>         return PTR_ERR(ipcp);
> @@ -1105,6 +1106,10 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
> case IPC_RMID:
>     freeary(ns, ipcp);
>     goto out_up;
> + case SEM_SET:
> +     err = ipc_update_key(&sem_ids(ns), &semid64.sem_perm, ipcp);
> +     if (err)
> +         break;
> case IPC_SET:
>     err = ipc_update_perm(&semid64.sem_perm, ipcp);
>     if (err)
> @@ -1152,6 +1157,7 @@ SYSCALL_DEFINE(semctl)(int semid, int semnum, int cmd, union
semun arg)
>     return err;
> case IPC_RMID:

```

```
> case IPC_SET:  
>+ case SEM_SET:  
>   err = semctl_down(ns, semid, cmd, version, arg);  
>   return err;  
> default:  
> diff --git a/security/selinux/hooks.c b/security/selinux/hooks.c  
> index 78b77ac..02b037d 100644  
> --- a/security/selinux/hooks.c  
> +++ b/security/selinux/hooks.c  
> @@ -5133,6 +5133,7 @@ static int selinux_sem_semctl(struct sem_array *sma, int cmd)  
>   perms = SEM__DESTROY;  
>   break;  
> case IPC_SET:  
>+ case SEM_SET:  
>   perms = SEM__SETATTR;  
>   break;  
> case IPC_STAT:  
> diff --git a/security/smack/smack_lsm.c b/security/smack/smack_lsm.c  
> index d51a8da..b4135ed 100644  
> --- a/security/smack/smack_lsm.c  
> +++ b/security/smack/smack_lsm.c  
> @@ -2253,6 +2253,7 @@ static int smack_sem_semctl(struct sem_array *sma, int cmd)  
>   case SETALL:  
>   case IPC_RMID:  
>   case IPC_SET:  
>+ case SEM_SET:  
>   may = MAY_READWRITE;  
>   break;  
> case IPC_INFO:  
>  
>--  
> To unsubscribe from this list: send the line "unsubscribe linux-security-module" in  
> the body of a message to majordomo@vger.kernel.org  
> More majordomo info at http://vger.kernel.org/majordomo-info.html
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